FLINT, V.Ye.

Distribution of mammals in northern Kazakhstan. Trudy Inst. zool. AN
— Kazakh. SSR 17:244-245 '62.   (MIRA 17:2)

FLINT, V.Ye.; KRIVOSHEYEV, V.G.

Comparative analysis of birds in the Izmaylovo Park Forest. Biul.
MOIP.Otd.biol. 67 no.3:18-28 My-Je '62.   (MIRA 15:11)
                (Moscow region—Birds)

FLINT, V.Ye.

Biology of the reproduction of the tiger polecat Vormella
peregusna.   Biul.MOIP.Otd.biol. 67 no.4:143 Jl-Ag '62.

(MIRA 15:10)

(TURKMENISTAN—! OLECATS)

FLINT, V.Ye.

"Birds of Kazakhstan." Reviewed by V.E. Flint. Ornitologiia
no.6:502-503 '63.   (MIRA 17:6)

PIONTKOVSKAYA, S.P.; FLINT, V.Ye.; KORSHUNOVA, O.S,

    Natural focus of tick-borne exanthematous fever in the Ubsu
    Nur trough in the Tuva A.S.S.R. Med. paraz. i paraz. bol. 32
    no.5: 581-585 S-0'63   (MIRA 16:12)

    1. Iz otdela prirodnoochagovykh bolezney Instituta epidemiologii
    i mikrobiologii imeni N.F. Gamalei.

PIONTKOVSKAYA, S.P.; FLINT, V.Ye.

Ecology of the juvenile forms of Dermacentor nuttalli Olen. and
other ticks of wild rodents in the Ubsa Nor Depression of the Tuva
A.S.S.R. Zool. zhur. 43 no.2:178-184 '64.   (MIRA 17:6)

1. Otdel prirodnoochagovykh bolezney Instituta epidemiologii i
mikrobiologii Akademii meditsinskikh nauk SSSR, Moskva.

FLINT, V.Ye.

"Mammals of the U.S.S.R.". Biul. MOIP. Otd. biol. 69 no.4:147-149
Jl-Ag '64.   (MIRA 17:11)

FLINT, V.Ye.; CHUGUNOV, Yu.D.; SMIRIN, V.M.; FORMOZOV, A.N., prof., red.;
MITIN, R.S., red.

[Mammals of the U.S.S.R.] Mlekopitaiushchie SSSR. Moskva,
Mysl', 1965. 437 p.   (MIRA 18:7)

KORSHUNOVA, O.S.; PIONTKOVSKAYA, S.P.; FLINT, V.Ye.

Natural foci of tick-borne typhus fever in the Buryat A.S.S.R.
Zool. zhur. 44 no.7:980-985 '65.·   (MIRA 18:9)

1. Otdel prirodnoochagovykh boleaney Instituta epidemiologii
i mikrobiologii AMN SSSR, Moskva.

FLINT, V.Ye.

Reviews and bibliography. Med. paraz. i paraz. bol. 34
no.2:242 Mr-Ap '65.   (MIRA 18:11)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Quartz. K. B. Flint. *Trans. Inst. Econ. Mineral.* (U. S. S. R.) 10-year Vol. 1933, 155 60. – A detailed description, with illustrations, of a process for the production of piezoquartz oscillators from native pebble crystals. The results of prospecting for suitable quartz deposits are described.

Chas. Blanc

A.S.M.–S.L.A METALLURGICAL LITERATURE CLASSIFICATION

CA

Application of Röntgen rays in the field of chemistry. B. Flint. Zavodskaya Lab. 3, 1110-12(1934). A discussion.

Chas. Blanc

A S U S L A METALLURGICAL LITERATURE CLASSIFICATION

Calamine crystals from Suleiman-Sai (Karakstan). E. R. Flint. *Vernadsky Jubilee Vol., Acad. Sci. U.S.S.R.* 1, 100–18(1936); *Mineralog. Abstracts* 7, 213. X-ray analysis of this calamine gave a 8.32, b 10.73, c 5.30 A; goniometric measurements gave a : b : c = 0.7832 : 1 : 0.4788.
C. A. Silberrad

PROCESSES AND PROPERTIES INDEX

METALLURGICAL LITERATURE CLASSIFICATION

X-Ray Cameras for Work at Low Temperatures. E. E. Flint and V. P. Butuzov (*Zavodskaia Laboratoria* (*Works' Lab.*), 1937, **6**, (1), 91-95).—[In Russian.] The walls and the base of the camera are made of copper. The base plate has a side piece with three holes through which are fitted copper rods of different diameters, the ends of the rods being immersed in liquid carbon dioxide. Efficient heat insulation of the camera, and the use of copper rods of varying thickness immersed to any required depth in the Dewar flask enable the temperature to be regulated with an accuracy of $\pm 1°$ in the range of $-10°$ to $-60°$ C.—D. N. S.

CA

Z

Influence of fusion on the hardness of stibnite. E. E. Flint and V. P. Butusov. *Trans. Moscow Geol.-Prospecting Inst.* **13**, 82-8(1939); *Mineralog. Abstracts* 10, 152 (1947).—Stibnite showed an increase in hardness after being fused, but the amt. of change varied greatly in different parts of the same fused mass. M. Fleischer

A catalogue of pyroelectric and piezoelectric crystals.
E. E. Flint. *Trans. All-Union Sci. Research Inst. Econ. Mineral.* (U. S. S. R.) No. 142, 50-102(in English, 103) (1939).—The paper attempts to list all substances that may possess pyroelec. and piezoelec. properties. It is subdivided into 3 sections. The 1st section contains the substances in which the pyroelec. and piezoelec. properties have been actually found. The 2nd section comprises those substances which, because of their symmetry, may possess these properties. This section contains the chem. compns. of the substances and all data that are available (sp. gr., m. p., decompn. temp., crystallographic consts., and for minerals hardness according to Mohs' scale). The 3rd section embraces those substances the symmetry of which has not been ultimately established, but which may belong to the 2nd group. The 2nd section comprises substances referring to 10 (L^3, L^4P, L^3L^2, L^4, L^4P, L^4L^2, L^2, $L^2_2L^2_2P$, L^3, L^3P, L^3L^2, L^2P, $3L^2$, L^2, P, L^4) from the 32 crystallographic classes, the selection being controlled by the presence of polar directions according to the theory of W. Voight. Only substances of the $3L^4L^6P$ and $3L^4L^6$ classes are omitted. 35 references.
W. R. Henn

cA

2

Geometric investigations. 1. $[Co(NH_3)_4CO_3]_2SO_4.3-H_2O$. B. K. Flint. *Trudy Inst. Krist. Akad. Nauk S.S.S.R.* 1947, No. 3, 11-12; *Chem. Zentr.* 1947, II, 5.— Fifteen crystals of this compd. were measured. They belonged to the orthorhombic system and probably to the pyramidal class (*I.22/*) with a:1:c = 1.4838:1:0.0080. The following forms were observed: a{100}, b{010}, m{230}, e{103}, o{133}, and d{111}. The crystals were dark carmine red and transparent.   M. G. Moore

Goniometric investigations of new substances. II. Two derivatives of adipic acid. Hexamethylenediamine adipate and ethylenediamine adipate. R. K. Flint (Inst. Cryst. Acad. Sci. Ud.S.S.R.). *Trudy Inst. Krist.* 1947, No. 3, 13-15; cf. C.A. 44, 2816d.—The hexamethylenediamine compd., $NH_2(CH_2)_6NH_2.OCO.(CH_2)_4COO$, formed colorless, transparent platelets which became opaque with time. They showed monoclinic symmetry about the {010} plane, probably belonging to the holohedral class C_{2h} − 2/m with $a:b:c$ = 0.3607:1:0.5855, β = 114°. The forms $b\{010\}$, $c\{001\}$, $m\{110\}$, $u\{130\}$, and $o\{011\}$ were observed. X-ray exams. showed a = 5.6, b = 13.7, and c = 9.1 A. The ethylene deriv. $NH_2(CH_2)_2NH_2.OCO.(CH_2)_4COO$, formed colorless, transparent rods showing monoclinic symmetry about the {001} plane and probably belonging to the class C_{2h} − 2/m with $a:b:c$ = 0.5050:1:0.5140. β = 100°51'. The forms $b\{010\}$, $c\{001\}$, $m\{110\}$, $u\{120\}$, $h\{320\}$, $d\{011\}$, and $o\{111\}$ are reported. Reflections were for the most part poor. III. **Methylenetoluenesulfonamide.** *Ibid.* 17-18.—This compd. (hexahydro-1,3,5-tris(p-tolylsulfonyl)-s-triazine) forms colorless, transparent crystals which appear in rod or needle form. They fracture readily perpendicular to the axis of the needle without showing clear fracture planes. Because of their clearly biaxial character and the direct extinction shown they are assumed to belong to the orthorhombic system, although the class cannot yet be detd. On the basis of a probable arrangement of several faces the following values were obtained: $a:b:c$ = 0.5774:1:0.6447; also $b\{010\}$, $c\{001\}$, $d\{101\}$, $m\{110\}$, and very seldom $b\{331\}$. Through *Chem. Zentr.* (*Russian Zone Ed.*) 1949, I, 701-7.

M. G. Moore

C A

Flint, E. E.: Practical Manual of Geometrical Crystal-
lography. (In Russian.) 2nd ed. Moscow: Gosgeolizdat.
1948. 178 pp. R. 13. Reviewed in *Mineralog. Abstracts*
20, 308(1951).

FLINT, Ye, Ye.

PHASE I   TREASURE ISLAND BIBLIOGRAPHICAL REPORT   AID 457 - I

Call No.: QD931.F5

BOOK
   Author: FLINT, YE. YE.
   Full Title: PRINCIPLES OF CRYSTALLOGRAPHY
   Transliterated Title: Nachala kristallografii
Publishing Data
   Originating Agency: None
   Publishing House: State Publishing House for Geological Literature
   Date: 1952   No. pp.: 224   No. of copies: 15,000
   Editorial Staff: None
      Others: The author expresses his gratitude to Prof. S. D. Chetverikov
              and V. P. Cherevik for assistance

Text Data
   Coverage: This is a short and concise textbook on crystallography on
      the level required in geological prospecting institutions of higher
      learning and in geological departments of universities. The author
      taught this course in the Moscow Geological Prospecting Institute
      im. S. Ordzhonikidze.

   While the book does not bring any new material, it could present an
   interest for those who like to examine the extent to which crystallo-
   graphy is taught in Soviet universities.

1/3

Nachala kristallografii   AID 457 - I

TABLE OF CONTENTS   PAGE

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Nachala kristallografii   AID 457 - I

Purpose: Approved by the Ministry of Higher Learning of the USSR as a
   textbook for students specializing in geology in mining institutes.
Facilities: Names of many Soviet scientific workers mentioned
No. of Russian and Slavic References: None
Available: Library of Congress

3/3

1. FLINT, Ye. Ye.

2. USSR (600)

4. Crustallography, Mathematical

7. Various methods of crystal drawing. Trudy Inst.krist., no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____ April _____ 1953, Uncl.

FLINT,Ye.Ye.

Installation and checking theodolite goniometers. Trudy MGRI no.26:
210-219 '54.   (MLRA 8:12)

(Goniometry)

FLINT, Ye Ye

POPOV, Georgiy Mikhaylovich; SHAFRANOVSKIY, Illarion Illarionovich;
FLINT,Ye.Ye., redaktor; SEMENOVA,M.V., redaktor; GUROVA,O.A.,
tekhnicheskiy redaktor

[Crystallography] Kristallografiia. Izd. 3-e, ispr. i dop.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geologii i okhrane
nedr, 1955. 294 p.   (MIRA 9:2)
                         (Crystallography)

FLINT, Yevgeniy Yevgen'yevich; POPOV, G.M., redaktor; SEMENOVA, M.V.,
redaktor izdatel'stva; POPOV, N.D., tekhnicheskiy redaktor

[Practical manual on geometrical crystallography] Prakticheskoe
rukovodstvo po geometricheskoi kristallografii. Izd. 3-e, perer.
i dop. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane
nedr, 1956. 207 p.   (MIRA 10:1)
        (Cristallography, Mathematical)

FLINT, Ye.Ye.

Method for measuring small crystals. Trudy MGRI 33:159-162 '58.
(MIRA 12:12)

(Crystals--Measurement)

FLINT, Ye.Ye.

Forms of cassiterite crystals in certain deposits of the U.S.S.R.
Zap. Vses. min. ob-va 87 no.2:240-241 '58.   (MIRA 11:9)

1. Deystvitel'nyy chlen Vsesoyuznogo mineralogicheskogo obshchestva.

PHASE I BOOK EXPLOITATION   SOV/3488

Flint, Yevgeniy Yevgen'yevich

Katalog vysokotverdykh kristallov (Catalog of Extra-Hard Crystals) Moscow,
    Izd-vo AN SSSR, 1959. 50 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut kristallografii.

Ed.: N.Yu. Ikornikova; Ed. of Publishing House: A.P. Senchenkov; Tech. Ed.:
    Yu.V. Rylina.

PURPOSE: This booklet is intended for specialists engaged in the production of
    synthetic hard crystals. It may also be of use to engineers and technicians
    working in the abrasives industry.

COVERAGE: The booklet is a catalog of mineral and synthetic crystals. The
    first part of the booklet, based on data published in mineralogical works,
    analyzes various mineral crystals classified in these works and presents
    characteristics of 61 crystals, such as diamond, iridium, quartz, laurite,
    tridymite, corundum, spinel, and others. Their shape, hardness, specific

Card 1/2

Catalog of Extra-Hard Crystals .   SOV/3488

weight, refraction, color, melting point are discussed. The second part
of the booklet, based mainly on data published in chemical or physical
works, deals primarily with the production of synthetic crystals in the
categories of carbides, nitrides, hydrides, borides and silicides. Methods
of production of various synthetic crystals are discussed, and characteris-
tics of these crystals given. There are 71 references: 15 Soviet, 40 Ger-
man, 11 French, 3 English, and 2 Dutch.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress.

Card 2/2   TM/lab
                                                              5-13-60

FLINT, Yevgeniy Yevgen!yevich, prof.; SHAGIROVA, I.M.; red.; GOROKHOVA, S.S., tekhn. red.

[Fundamentals of crystallography] Nachala kristallografii. Izd.2. Moskva, Gos.izd-vo "Vysshaia shkola," 1961. 241 p.   (MIRA 14:12)
(Crystallography)

FLINT, Ye.Ye.

New photogoniometer model. Kristallografiia 6 no.2:287-288
Mr-Ap '61.   (MIRA 14:9)

1. Institut kristallografii AN SSSR.
                              (Goniometers)

FLIORENT, I.P., inzh.

Continuous conveyor lines for the enameling of parts. Mekh. i
avtom.proizv. 19 no.1:17-20 Ja '65.   (MIRA 18:3)

KUKUYEV, Ye.M.; YEFIMOV, V.F.; FLIORIN, B.S., otv.red.; VALENTINOV,
    A.M., red.; ABRAMYAN, A.A., red.; KISELEV, N.A., red.; METLIN,
    V.A., red.; ANDREYEV, G., tekhn.red.

[Handbook with nomenclature and prices for materials and equipment
used in the coal industry] Nomenklaturnyi spravochnik i tseny na
materialy i oborudovanie, primeniaemye v ugol'noi promyshlennosti.
Moskva. Group 2. [Nonferrous metals] TSvetnye metally. 1950.
275 p.   (MIRA 13:4)

1. Russia (1923- U.S.S.R.) Ministerstvo ugol'noy promyshlennosti.
            (Nonferrous metals)
    (Coal mines and mining--Equipment and supplies)

FLIPOV, G.

"International Commission on Large Dams of the World Power Conference."

p. 40 (Elektroenergiia, Vol. 8, no. 11/12, Nov./Dec. 1957, Sofiia, Bulgaria)

"Studen Kladenets Dam is Completed"

p. 42 (Elektroenergiia, Vol. 8, no. 11/12, Nov./Dec. 1957, Sofiia, Bulgaria)

"Lightning installations for big stadiums"

p. 43 (Elektroenergiia, Vol. 8, no. 11/12, Nov./Dec. 1957, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 6, June 1958

FLIFCKI, W.

Fighting corrosion of concrete in cellulose factories, p. 85. (PRZEGLAD PAPIERNICZY, Lodz, Vol. 11, no. 3, Mar. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

FLIRSKI, W.

FLIRSKI, W. Corrosion and protection of concrete structures in the food industry.
p. 239.

Vol. 10, no. 6, June, 1956
PRZEMYSL SPOZYWCZY
TECHNOLOGY
Warsaw, Poland

So. East Accession Vol. 6, no. 2, Feb. 1957

FLINSKI, W.

Corrosion of buildings in the tanning industry and the means of its prevention.
p. 75
(Przeglad Skorzany, Vol. 12, No. 3, Mar 1957, Krakow, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. P, Aug 1957. Uncl.

FLIS, Henryk

Instruction conferences as a method of perfecting the
scientific personnel. Nauka polska 10 no.3:101-106
My-Je '62.

1. Biuro Ksztalcenia i Doskonalenia Kadr Naukowych, Polska
Akademia Nauk, Warszawa.

FLIS, I.K.; BYNYAYEVA, M.K.

Platinum electrode after treatment in solutions of hypochlorite and other oxidizing agents. Zhur. fiz. khim. 37 no.12:2621-2626 D '63. (MIRA 17:1)

1. Leningradskiy tekhnicheskiy institut tsellyulozno-bumazhnoy promyshlennosti.

FLIS, I.E.

Chemical Abstracts
May 25, 1954
Electrochemistry

(3)

Oxidation potentials of hypochlorite solutions. B. P. Nikol'skiĭ and I. E. Flis (Molotov Technol. Inst., Leningrad). *J. Gen. Chem. U.S.S.R.* 22, 1343-9(1952)(Engl. translation); *Zhur. Obshcheĭ Khim.* 22, 1298-1307(1952). — In ClO⁻ solns. at pH > 9.3, the oxidation potential changed with the concn. of H⁺, ClO⁻, and Cl⁻. In this region the potential could be calcd. from the equation, $\phi = \phi_0 -0.058 \, pH + 0.058/2 \log a_{ClO^-}/a_{Cl^-}$, where $\phi_0 = 1.267$ v. In solns. with a pH from 8.5 to 4.0, the dependence of the oxidation potential on pH was represented by a straight line lying 55-60 mv. higher than the straight line obtained in the alk. region. The potential did not change with the concn. of Cl⁻ ions in this region. An effect of ClO₄⁻ ions on the oxidation potential in alk., neutral, and weakly acid regions could not be detected. In solns. of pH < 3.5, the potential was governed by the equil. of Cl hydrolysis. The electrode behaved like a Cl electrode.   Bernard Rubin

FLIS, I.E.

Bri' ~~~ ~~~
June 1953

Textile, Bleaching; Dyeing;
Printing and Finishing

Chemistry
4

Use of buffer substances in the bleaching of cellulose. I. E. Flis and E. Ya. Perlshtein (J. appl. Chem. USSR, 1952, 25, 766—772).—The chemical and physico-chemical characteristics of cellulose are much better conserved during bleaching, when this is carried out by hypochlorite solutions buffered at pH 9—11 with silicates, $NaHCO_3$–Na_2CO_3, $Ca(OH)_2$ or $Mg(OH)_2$ suspension, than when unbuffered or buffered at other pH. R. C. MURRAY.

FLIS, I. E.

②

The application of buffer substances in bleaching of cellu-
losa. I. E. Flis and E. Ya. Perl'shtein (V. M. Mo'nuv
Leningrad Inst. Technol.). J. Appl. Chem. U.S.S.R. 25,
845-51(1952)(Engl. translation).—See C.A. 47, 3558b.
H. L. H.

11-5-54
muf

Buffering bleach solutions. L. K. Ellis and K. Ya. Perl'shtein (Molotov Tech. Inst., Leningrad). *Bumazh. Prom.* 27, No. 7, 16-19(1952).--The use of CaO-MgO to buffer hypochlorite bleaching solns. is discussed, and data are given from a no. of bleach plants using hypochlorite buffers. E.g., in a 4-hr. hypochlorite pulp-bleaching operation at 41° and pH 10.5, the consumption of CaO was 18 kg./ton bleached pulp, the viscosity of the unbleached and bleached pulp was 1551 and 423 millipoises, and α-cellulose, ash, and resins, breaking length, and brightness values for the bleached pulp were 87.6%, 0.26%, 0.65%, 8404 m., and 91, resp.   John Lake Keays

USSR.

Potentiometric titration using catalytic decomposition of hydrogen peroxide on a platinum electrode. I. K. Ela. M. Molotov. Technol. Inst., Leningrad. Zavodskaya Khim. 10, 38–43(1955).—The method consists in adding 2–3 ml. of 3% H_2O_2 to the soln. and then immersing a Pt electrode; O evolves at the electrode. The potential of the electrode is proportional to the pH of the soln., this ratio is approx. 0.055 v. per unit pH. The method is applicable, e.g., to titration of hypochlorites in which ClO^-, OH^-, and CO_3^{--} are to be detd. This is accomplished by 2 titrations: one on an aliquot of the original soln. and the other on a similar aliquot to which H_2O_2 is added. This method is also applicable in the titration of chlorates. Also in J. Anal. Chem. U.S.S.R. 10, 31–5(1955)(Engl. translation).

M. Hoseh

USSR.

Potentiometric determination of bichromate and strongly acidic ions when present together. I. E. Pis and [...] V. M. Mulo. [...] Leningrad [...]

[illegible faded text]

FLIS, I. Ye

Flis, I. Ye.

USSR/Analysis of Inorganic Substances   G-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19632

Author : I. Ye. Flis, M. K. Bynyayeva.
Inst   : -
Title : Analysis of Hypochlorites and Chlorites in Solution.

Orig Pub: Zh. Analit. Khimii, 1956, 11, No 4, 453 - 458

Abstract: The conditions of potentiometric titration of
ClO_2^- and ClO^- with Na_2SO_3 and As_2O_3 were studied.
It was established that ClO_2^- reacted slowly with
Na_2SO_3 in an alkaline medium, but it reacted
quickly in an acidited medium; therefore, ClO_2^-
should be titrated in a neutral and slightly acid
medium (pH about 7.0 to 4.0). Slightly alkaline

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USSR/Analysis of Inorganic Substances   G-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19632

and slightly acid media ($5 < pH < 8$) are the
best for the potentiometric titration of ClO^-
with a solution of Na_2SO_3. Solutions containing
ClO^- and ClO_2^- are not stable in slightly alka-
line, neutral and slightly acid media. The con-
clusion was arrived at that the potentiometric
titration with the Na_2SO_3 solution could not give
reliable results at a simultaneous determination
of ClO^- and ClO_2^-. The reaction of ClO_2^- with
As_2O_3 in an alkaline medium proceeds very slowly
(the studied system is stable only in the alka-
line region), therefore, ClO^- can be titrated
off in presence of ClO_2^-. The final point can
be determined easily by a sharp change of the

Card 2/3   - 113 -

USSR/Analysis of Inorganic Substances   G-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19632

ozidizing potential. The following method is re-
commended: the total content of ClO_2^- and ClO^-
is determined in one sample by the iodometric
method and ClO^- is determined in another sample
be the potentiometric titration in alkaline
medium (pH > 9) with As_2O_3.

Card 3/3   - 114 -

FL-IS, I.Ye

USSR/Inorganic Chemistry.   Complex Compounds.   C

Abs Jour	:	Ref Zhur - Khimiya, No. 8, 1957, 26455.
Author	:	Flis, I.Ye., Vasil'yeva, T.M.
Inst	:	
Title	:	Potentiometric Study of Chlorite Solutions.
Orig Pub	:	Zh. obshch. khimii, 1956, 26, No. 5, 1272 - 1277.

Abstract   : The potentiometric titration of the Na and Ba chlorites was carried out with acid and alkali on the installation with a glass electrode described earlier (Nikol'skiy B.P., Flis I.Ye., Tr. LTI im. Molotova, 1949, No. 1, 61) The titration curves show that $HClO_2$ is a far stronger acid than H_2CO_3 and $HClO$. The formation of noticeable amounts of ClO_2 in the chlorite solution begins at pH equal to 5 - 6. The oxidizing potential φ was measured

Card 1/2

V. M. Molotov Technol. Inst, Leningrad
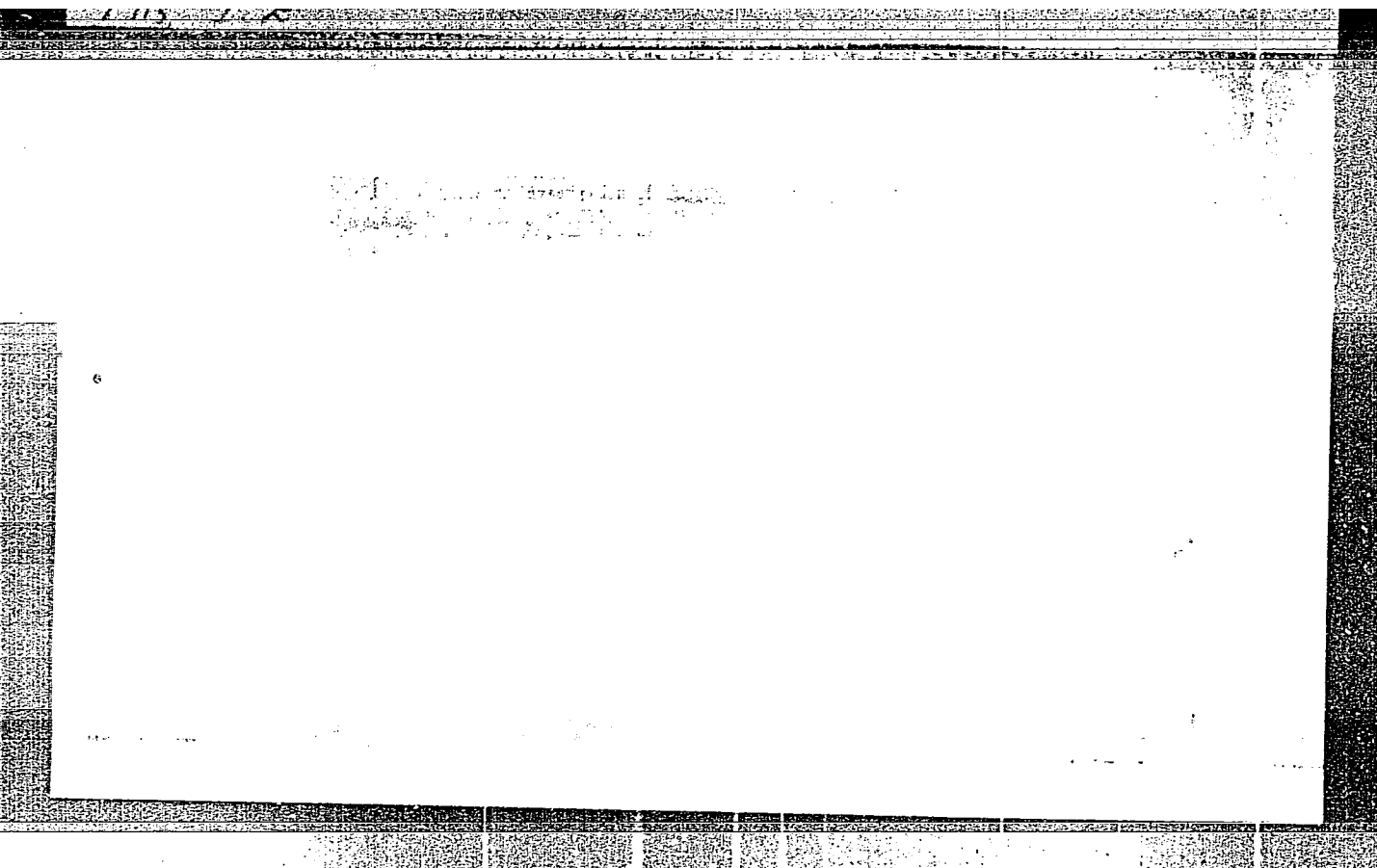
FLIS, I.Ye.

Certain properties and methods for preparation of chlorine dioxide
and chlorites in connection with their practical application. Zhur.
prikl.khim. 29 no.5:633-645 My '56.   (MLRA 9:8)

1. Leningradskiy tekhnologicheskiy institut imeni V.M. Molotova.
          (Chlorine oxides) (Chlorites)

FLis, I.Ye,

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria,
        Physical-Chemical Analysis, Phase Transitions.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3754.

Author : I.Ye. Flis, K.Yu. Salnis, K.P. Mishchenko.
Inst :
Title : Thermochemical Study of Interaction of Chlorine and Hydrogen
        Peroxides.

Orig Pub: Zh. neorgan. khimii, 1957, 2, No 7, 1471-1473.

Abstract: The thermal effect of the interaction of ClO_2 with H_2O_2 with
the formation of chlorites was measured at 10 to 35°. H_2O_2
dissociates in an alkaline medium with the formation of HO_2^-
perhydroxyl ion and the reaction proceeds according to the
mechanism $2ClO_2$ (solution) + H_2O^- + OH^- = $2ClO_2$ + H_2O (li-
quid) + O_2 (gas). LogK = $-98840/T$ - $16691ogT$ + $1.27T$ +
4099.8 was derived based on experimental data. The enthalpy,
isobaric potential and entropy changes at this reaction at

Card : 1/2   -6-

Leningrad Tech. Inst. im V. M. Molotov

FLIS, I. Ye

SALNIS, K.Yu.; MISHCHENKO, K.P.; FLIS, I.Ye.

Thermodynamics of the dissociation of hydrogen peroxide in
aqueous solutions. Zhur.neorg.khim. 2 no.9:1985-1989 S '57.
(MIRA 10:12)

1.Leningradskiy tekhnologicheskiy institut.
            (Dissociation) (Hydrogen peroxide)

TUMANOVA, T.A.; MISCHENKO, K.P.; FLIS, I.Ye.

Dissociation of hydrogen sulfide in aqueous solutions at different temperatures. Zhur.neorg.khim. 2 no.9:1990-1997 S '57.

(MIRA 10:12)

1.Leningrad nauchno-issledovatel'skiy institut po pererabotke nefti i Leningradskiy tekhnologicheskiy institut, kafedra fizicheskoy i kolloidnoy khimii.
(Dissociation) (Hydrogen sulfide)

AUTHORS: Flis, I. Ye., Bynyayeva, M. K.   75-6-16/23

TITLE: The Determination of Chlorine Dioxide in Solutions
             (Opredeleniye dvuokisi khlora vrastvore).

PERIODICAL: Zhurnal Analiticheskoy Khimii , 1957, Vol. 12, Nr 6,
             pp. 740-743 (USSR)

ABSTRACT: The method of the determination of chlorine dioxide in
             solutions is based on its decomposition with hydrogen per-
             oxide in an alkaline medium. The analysis is suited for the
             determination of chlorine dioxide in presence of chlorites,
             chlorates, chlorides and carbonates. By this method it is
             possible to determine a 0,0005 gram equivalent of ClO_2.
             This method can also be applied to the determination of
             chlorine dioxide and chlorite in bleaching solutions,
             There are 3 tables and 15 references, 2 of which are Slavic.

ASSOCIATION: Technological Institute, Leningrad (Leningradskiy tekhnologi-
             cheskiy institut).

SUBMITTED: February 7, 1955
             1. Bleaching solutions 2. Chlorine dioxide-Determination
Card 1/2   3. Chlorites 4. Chlorates 5. Carbonates

The Determination of Chlorine Dioxide in Solutions.   75-6-16/23

AVAILABLE: Library of Congress

Card 2/2

FLIS, I. Ye.

USSR/Physical Chemistry - Solutions, Theory of Acids and Bases.   B-11

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7280.

Author : K.P. Mishchenko, I.Ye. Flis.
Inst   :
Title   : Upon The Formation Possibility of Positive Halogen Ions in
          Aqueous Solutions.

Orig Pub: Zh. prikl. khimii, 1957, 30, No 5, 665-674.

Abstract: The changes of thermodynamic potentials and the equilibrium
          constants of formation reactions of Cl^+, Br^+ and I^+ in aqueous
          solutions were computed by the method of thermodynamic cycles.
          A little thermodynamic probability of the existence of these
          cations in aqueous solutions was established, their formation
          capability decreasing from iodine the chlorine; the most pro-
          bable processes of such cation formation are interaction re-
          actions of hypohalites with corresponding acids. The compu-
          tations carried out for hypochlorite solutions, as well as

Card   : 1/2   -1-

Leningrad Tekh. Inst. im. V. M. Molotov.

USSR/Physical Chemistry - Solutions, Theory of Acids and Bases.   B-11

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7280.

data of oxidizing potentials and cathode polarization in these solutions did not confirm the hypothesis of an active partici- pation of Cl^+ ions in oxidation processes proceeding at cellu- lose and fabrik bleaching. The authors assume that the real oxidizer in such processes is molecular chlorine.

Card   : 2/2

-2-

AUTHORS: Flis, I. Ye., Mishchenko, K. P.,   SOV/78-3-8-10/48
              Pakhomova, N. V.

TITLE: The Thermochemistry of the Dissociation of Sulfuric Acid and
              Hypochlorous Acid in Aqueous Solutions (Termokhimiya
              dissotsiatsii sernoy i khlornovatistoy kislot v vodnom
              rastvore)

ABSTRACT: By means of thermochemical tests the reaction of solutions of
              sodium hypochloride with sulfuric acid was investigated. The

              heat effect of the reaction $ClO^- + H^+ \rightarrow HClO$ and

              $OH^- + HSO_4^- \rightarrow SO_4^{2-} + H_2O$ was calculated. The thermochemical

              investigations of the processes in hypochloride solutions
              were combined with a calorimetric and potentiometric method.
              This method is also applicable in the investigation of thermo-
              chemical reactions with other instable systems. The potentio-
              metric determinations were performed with platinum electrodes
Card 1/3   and their results make it possible to correct the values found

The Thermochemistry of the Dissociation of   SOV/78-3-8-10/48
Sulfuric Acid and Hypochlorous Acid in Aqueous Solutions

by the thermochemical analysis. The heat effect of the neutralization of diluted solutions of sulfuric acid at 10, 25, 35 and 50°C was determined. From the data the dissociation constant of HSO_4^- was computed. The average of the computed heat effect for the corresponding temperatures is the

following: At 10°C = -16,04 ± 0,04 kcal/gram equivalent,

at 25°C = -15,74 ± 0,04 kcal/gram equivalent,

at 35°C = -15,61 ± 0,08 kcal/gram equivalent,

at 50°C = - 15,32 ±0,04 kcal/gram equivalent.

The dissociation heat of the chloric acid in aqueous solutions was investigated. From the experimental results the thermodynamic characteristic of this process in the temperature range of 10 - 50°C was found:

At 10°C = 5,90 ± 0,05 kcal/mol

at 25°C = 5,70 ± 0,04 kcal/mol

Card 2/3   at 35°C = 5,40 ± 0,05 kcal/mol

The Thermochemistry of the Dissociation of   SOV/78-3-8-10/48
Sulfuric Acid and Hypochlorous Acid in Aqueous Solutions

at $50^{\circ}C$ = 5,0 ± 0,04 kcal/mol.
The dissociation process of the chloric acid is of an endo-
thermic nature.
There are 6 figures, 6 tables, and 27 references, 11 of which
are Soviet.

SUBMITTED: July 10, 1957

Card 3/3

SOV/78-3-8-11/48

AUTHORS: Flis, I. Ye., Mishchenko, K. P. Pakhomova, N. V.

TITLE: The Calculation of the Fundamental Thermodynamic Values for ClO^-_{aq} and $HClO_{aq}$ at 25° Centigrade (Vychisleniye osnovnykh termodinamicheskikh velichin dlya ClO^-_{aq} i $HClO_{aq}$ pri 25°)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol. 3, Nr 8, pp. 1781-1784 (USSR)

ABSTRACT: Thermochemical testings were performed of the reaction $ClO^-_{aq} + H_2O_2\ _{aq} \longrightarrow Cl^-_{aq} + H_2O + O_2$ at 10, 25, 35, and 50° centigrade. The results obtained at 25° centigrade were used for the calculation of the calorimetric testings. Based on their own results the fundamental thermodynamic values for ClO^-_{aq} and $HClO_{aq}$ at 25° centigrade were calculated:

$\Delta H^{\circ}_{298(ClO^-_{aq})} = -25,73$ kcal/g-ion

$\Delta H^{\circ}_{298(HClO_{aq})} = -31,37$ kcal/mol

$\Delta Z^{\circ}_{298(HClO_{aq})} = -19,17$ kcal/mol

Card 1/2

SOV/78-3-8-11/48

The Calculation of the Fundamental Thermodynamic Values for ClO^-_{aq} and $HClO_{aq}$ at 25° Centigrade

$$\Delta Z^o_{298(ClO^-_{aq})} = -9{,}21 \text{ kcal/g-ion}$$

$$S^o_{298(HClO_{aq})} = 25{,}84 \text{ E.ye.}$$

$$S^o_{298(ClO^-_{aq})} = 11{,}36 \text{ E.ye.}$$

There are 2 tables and 16 references, 12 of which are Soviet.

SUBMITTED: June 10, 1957

Card 2/2

FLIS, I.Ye.

Effect of pH and temperature of media on the ratio of active
oxidizers in hypochlorite solutions during chlorination and bleaching
processes. Zhur. prikl. khim. 31 no.8:1194-1201 Ag '58.

(MIRA 11:10)

1. Leningradskiy tekhnologicheskiy institut.
(Chlorination) (Bleaching) (Oxidizing agents)

AUTHOR: Flis, I. Ye.   76-32-3-11/43

TITLE: On Oxidation Potentials of   Solutions of Chlorite and
            Chlorine Dioxide (Ob okislitel'nykh potentsialakh
            rastvorov khlorita i dvuokisi khlora)

ABSTRACT: The data of Holst (ref 5) on the normal potential
            equilibrium in solutions with chlorite and chlorine
            dioxide cannot be fully utilized, in default of data on
            reversibility and analytical data, whereas in the present
            paper,   investigations on the reversibility of the
            measured potentials and values of the   normal potential
            equilibrium calculated from them were carried out.
            Data on the experimental method are given, from which it may
            be seen   that a potentiometer according to Raps,
            as well as a glass electrode with a lamp potentiometer were
            used. From the given results of the experiments on the
            oxidation potential at different pH, it follows that a
            determinable chlorite formation from the chlorine-oxide
Card 1/3   solutions takes place when pH > 4, whereas the formation

On Oxidation Potentials of   Solutions of Chlorite and 76-32-3-11/43
Chlorine Dioxide

of chlorine dioxide in chlorite solutions was observed
when pH $<$ 6.5. Platinum and gold-plate electrodes were used
in the investigations of the oxidation-reduction system of
the above-mentioned solutions, where experiments of
electrode-polarization were performed at different pH
(by Zh. L. Bert). The investigations showed that
reversibility can be attained at an approximate pH of
4-8. The determinations of the normal equilibrium
potential, part of the measurements given in a tabular
form having been performed by N. V. Trotskaya showed a value
of 0.934$\pm$0.002 V for the equilibrium:

$$ClO_2 \text{ solution} + e^- \rightleftharpoons ClO_2^- .$$
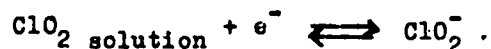
Standard values of the isobaric potentials of the formation
of ClO_2 in solutions, as well as the entropy, were also
calculated and given with

Card 2/3

$$\Delta Z^0_{ClO_2 \text{ aq.}} = 25.55 \text{ kgcal/mole and } S^0_{ClO_2 \text{ aq}} - 43.9.$$

On Oxidation Potentials of   Solutions of Chlorite and   76-32-3-11/43
Chlorine Dioxide

          There are 3 figures, 1 table, and 11 references,
          8 of which are Soviet.

ASSOCIATION: Leningradskiy Tekhnologicheskiy institut
             (Leningrad Technological Institute)

SUBMITTED: October 9, 1956

Card 3/3

FLIS, I. Ye,, Doc Chem Sci (diss) -- "Investigation of the processes and equili-

bria in solutions of oxygen compounds of chlorine as applied to bleaching cellu-

lose and fabrics". Leningrad, 1959. 37 pp (Min Higher Educ USSR, Leningrad Order

of Labor Red Banner Tech Inst im Leningrad Soviet), 150 copies (KL, No 21, 1959,

111)

,5(4)   SOV/78-4-2-6/40
AUTHORS: Flis, I. Ye., Mishchenko, K. P., Tumanova, T. A.

TITLE: On the Dissociation of Arsenic Acid (O dissotsiatsii mysh'-
                yakovoy kisloty)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2,
                pp 277-285 (USSR)

ABSTRACT: The dissociation of arsenic acid was examined by potentio-
                metric titration. Solutions of 0.05 and 0.1 moles sodium
                arsenate were titrated by sulfuric acid and hydrochloric
                acid at 10, 25, 35, and 50°. The dissociation constants K_1,
                K_2, and K_3 of H_3AsO_4 were determined from the titration results.
                On the titration curve three sections can be distinguished:
                the first one at pH 11.9-9, the second at pH 9-4.5, and the
                third at pH < 4. The dissociation constants K_1, K_2, and K_3
                determined at various temperatures are shown in the tables 1,
                2, and 3. The degree of hydrolysis and the composition of
                the aqueous solutions of H_3AsO_4 at various temperatures and
Card 1/2   pH values and ionic strengths of μ = 0.01, 0.05, and 0.10

On the Dissociation of Arsenic Acid

were determined. The results are shown in figures 2 and 3.
The heat effects, the change of the isobaric potential, and
the change of the entropy in the processes 1, 2, and 3 of
the gradual dissociation were determined. The average values
of the thermodynamic quantities of the dissociation processes
of H_3AsO_4 in aqueous solutions are shown in table 4.

There are 3 figures, 4 tables, and 35 references, 10 of which
are Soviet.

ASSOCIATION: Leningradskiy nauchno-issledovatel'skiy institut po pererabotke
nefti (Leningrad Scientific Research Institute of Petroleum
Processing) Leningradskiy tekhnologicheskiy institut
(Leningrad Technological Institute)

SUBMITTED: November 5, 1957

Card 2/2

SOV/80-32-2-8/56

AUTHORS: Flis, I.Ye., Mishchenko, K.P., Salnis, K.Yu.

TITLE: Study of the Rate of Some Reactions in Aqueous Solutions
              Containing Chlorine Dioxide, Chlorine, and Hypochlorous Acid
              (Izucheniye skorosti nekotorykh reaktsiy v vodnykh rastvorakh,
              soderzhashchikh dvuokis' khlora, khlor i khlornovatistuyu
              kislotu)

ABSTRACT: Chlorine dioxide solutions used in the cellulose, paper,
              and textile industry contain certain quantities of chlorine,
              and the products of its hydrolysis, hypochlorous and hydro-
              chloric acid $/$ Ref. 1 - 4 $/$. In these solutions an inter-
              action of ClO_2 with HClO and chlorine must be expected.
              The constants of the reaction rates between chlorine dioxide
              and chlorine in an aqueous solution are calculated here.
              Figures 1 and 2 and Table 1 show that a temperature increase
              from 10 - 60°C is accompanied by an increase in the reaction
              rate. The speed constant increases approximately 25 times.
Card 1/2   The higher   the concentration of the active chlorine in the

SOV/80-32-2-8/56

Study of the Rate of Some Reactions in Aqueous Solutions Containing Clorine
Dioxide, Chlorine and Hypochlorous Acid

solution, the sharper is the increase in the reaction rate.
The interaction of ClO_2 and $HClO$ leads to the formation of
chlorates and chlorides and to the acidification of the solu-
tion. Formulae for the kinetics of these reactions are derived
and values for the various constants given.
There are 3 graphs, 4 tables, and 13 references, 5 of which
are Soviet, 4 English, and 4 German.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut (Leningrad Techno-
logical Institute)

SUBMITTED: December 16, 1957

Card 2/2

5(4)

$SOV/76-33-7-24/40$

AUTHORS: Troitskaya, N. V., Mishchenko, K. P., Flis, I. Ye.

TITLE: An Investigation of the Equilibrium $ClO_{2_{p-p}} + e \rightleftarrows ClO^-_{2_{p-p}}$ in Aqueous Solutions at Various Temperatures

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7, pp 1614 - 1617 (USSR)

ABSTRACT: On the basis of various properties solutions of ClO_2 and chlorites are used as bleaching agents in textile industry and paper production. Bleaching is usually carried out in weakly acid medium (Ref 3) in which the above equilibrium occurs. The latter was investigated already several times. According to these data of publications, the authors investigated here the potential of the platinum electrode in solutions of chlorite and chlorine dioxide at pH 4 - 6 under the assumption that the measured values were dependent on the above equilibrium (1). Potentiometric experiments were made at the temperatures of 1o, 25, 35 and 50°C, which are important for practical purposes. All potential and pH measurements were made by the method of compensation on Raps' potentiometer and a 1E01 electrometer tube. Before the tests, the sodium chlorite and ClO_2 solutions were analyzed with respect

Card 1/2

An Investigation of the Equilibrium ClO_{2p-p} +   SOV/76-33-7-24/40

+ e $\rightleftharpoons$ ClO^-_{2p-p} in Aqueous Solutions at Various Temperatures

to the content of ClO^-_2, ClO^-, Cl^-, $ClO^!_3$, OH^-, HCO^-_3, and CO^{2-}_3 ions (Refs 13-15). Evaluation of the measurement results (Table 1) yielded results (Table 2) which can be represented by the follow-ing equations:

$$\lg ClO_2/ClO^-_2 = -5.376 + 0.0613\ T - 0.0_3 194T^2 + 0.0_6 200T^3\ V \quad (1)$$

$$\Delta Z^0 = 124.0 + 0.0.005\ T^2 - 0.0_5 5T^3 - 1.4\ T\ kcal/mol \quad (2).$$

There are 2 tables and 16 references, 7 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut (Leningrad Institute of Technology)

SUBMITTED: January 1o, 1958

Card 2/2

5. (4)
AUTHORS: Flis, I. Ye., Mishchenko, K. P.,   SOV/76-33-8-11/39
               Troitskaya, N. V.

TITLE: Potentials of Chlorine Electrodes at Various Temperatures

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 8, pp 1744 - 1749
               (USSR)

ABSTRACT: The oxidizability of chlorine and its compounds is important
               for the technology of chlorination and bleaching of cellulose
               and textile fabrics. In publications, many investigations con-
               cerning the properties of chlorine and particularly regarding
               the determination of the potential (P) of the chlorine elec-
               trode (CE) are described. In (Ref 2) it was found that a plati-
               num electrode (PE) behaves like a (CE) in acid hypochlorite
               solutions. On the basis of data found in publications, the (P)
               of the (PE) in acid hypochlorite solutions was investigated in
               the present case. The solutions contained larger amounts of
               dissolved chlorine (C). It was assumed that the values obtained
               were due to the balance $1/2 \, Cl_{2_{gas}} + e \rightleftharpoons Cl^-_{solution}$ (2). Poten-

Card 1/3   tiometrical measurements were carried out in the most practical

Potentials of Chlorine Electrodes at Various   SOV/76-33-8-11/39
Temperatures

temperature range at 10, 25, 35, and 50°C. All (P)- and pH-measurements were carried out by the compensation method with a Raps potentiometer (with an electrometric tube 1E01). A series of potentiometrical titrations with a Pt- and glass-electrode of 0.08 - 0.04 n NaClO-solutions, and 0.1 n H_2SO_4-solutions were carried out, the pH and the oxidation potential (OP) being measured. The calculation of the normal potential of (C) $\varphi^0_{Cl_2/2Cl^-}$ was carried out by means of a known equation (5) (Table 1, for solutions with a (C)-concentration corresponding to the (C)-pressure in equilibrium at 1 atm). The normal (OP) of the system $Cl_{2\ gas}$ - 2 $Cl^-_{solution}$ for the above temperatures were calculated from the experimental data (Table 2). The values for 25°C agree well with those found in publications (Refs 5, 11, 17). It is assumed that for this reason the values given for other temperatures are also reliable. Equations for the temperature function of $\varphi_{Cl_2/2Cl^-}$ and $\Delta Z^0_{Cl_2/2Cl^-}$ (change in the isobaric

Card 2/3   potential) were obtained, and the values ΔZ^0, $d\varphi^0/dT$, ΔH and ΔS

Potentials of Chlorine Electrodes at Various   SOV/76-33-8-11/39
Temperatures

of the equilibrium for the above temperatures were calculated.
The values φ^0 and ΔZ^0 were determined for the following equi-
libria (at the above temperatures):

$$HClO_{solution} + H^+_{solution} + 2\ e^- \rightleftharpoons Cl^-_{solution} + H_2O_{liqu}$$

$$ClO^-_{solution} + 2\ H^+_{solution} + 2\ e \rightleftharpoons Cl^-_{solution} + H_2O_{liqu}$$

$$ClO^-_{solution} + H_2O_{liqu} + 2\ e \rightleftharpoons Cl^-_{solution} + 2\ OH^-_{solution}$$

$$HClO_{solution} + H^+_{solution} + e \rightleftharpoons 1/2\ Cl_{2\ gas} + H_2O_{liqu}$$
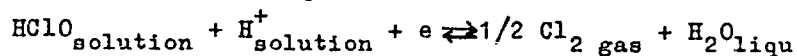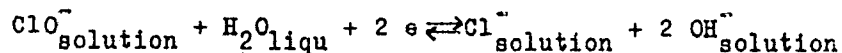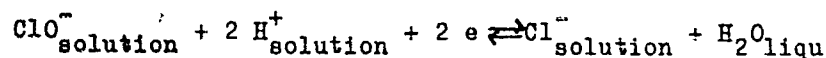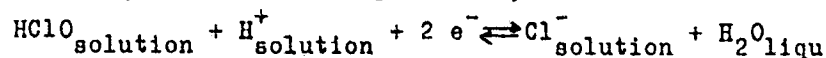
The temperature functions of the normal potentials of the latter
equilibria are given by corresponding equations. There are
3 tables and 23 references, 11 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut (Leningrad Technologic-
al Institute)

SUBMITTED: January 10, 1958
Card 3/3

MISHCHENKO, K.P.; TUMANOVA, T.A.; FLIS, I.Ye.

> Determination of sulfide, hydrosulfide, and hydrogen sulfide
> present simultaneously in pure aqueous solutions. Zhur.anal.khim.
> 15 no.2:211-217 Mr-Ap '60.   (MIRA 13:7)

> 1. Leningradskiy tekhnologicheskiy institut tsellyulozno-bumazhnoy
> promyshlennosti.
>   (Sulfide)   (Hydrogen sulfide)

FLIS, I.Ye.; BYNYAYEVA, M.K.; BLOSHTEYN, I.I.

Conditions required for a chemical method of preparing chlorates.
Zhur.prikl.khim. 33 no.4:779-783 Ap '60.   (MIRA 13:9)
(Chlorates)

FLIS, I.Ye.

Thermodynamic analysis of the processes involved in the reduction of chlorates by sulfuric anhydride and methyl alcohol. Zhur. prikl. khim. 33 no.8:1767-1774 Ag '60.   (MIRA 13:9)
(Chlorates)   (Sulfur trioxide)   (Methanol)

FLIS, I.Ye.; TUMANOVA, T.A.

Determination of sulfur dioxide and chlorate present simultaneously.
Zav.lab. 26 no.8:943-945 '60.   (MIRA 13:10)

1. Leningradskiy tekhnologicheskiy institut.
    (Sulfur dioxide)   (Chlorate)

25651
S/080/60/033/012/005/024
D209/D305

H. 131°

AUTHORS: Mishchenko, K.P., Flis, I.Ye., and Kustodina, V.A.

TITLE: Thermodynamic characteristics of aqueous hydrogen
              peroxide and its reactions with chlorine at different
              temperatures

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 12, 1960,
              2671 - 2675

TEXT: Due to the absence of thermodynamic data for the hydrogen pe-
roxide solution for a wide temperature range the authors studied
the reaction

$$H_2O_2 \rightarrow H_2O + \frac{1}{2}O_2 \qquad (1)$$
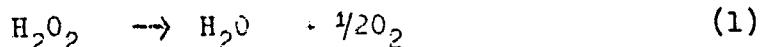
at temperatures of 5°, 10°, 25° and 35°C to provide the necessary
information. Calorimetric experiments were conducted using a
Vrevskiy calorimeter [Abstractor's note: No information given].
Into this, 300 ml. of a H_2O_2 solution, containing 0.048 mol H_2O_2/1

Card 1/5

25651
S/080/60/033/012/005/024
Thermodynamic characteristics of ...   D209/D305

(determined by the permanganate method) and an ampoule containing
analytically pure MnO_2 were introduced. On reaching a thermal equi-
librium the ampoule was broken and MnO_2 liberated caused the decom-
position of the H_2O_2. From the temperature changes, the quantity
of heat liberated and hence $\triangle H$ were determined for the above men- $\times$
tioned temperatures. The results obtained showed that the $\triangle H$ of
reaction (1) changes negligibly with the temperature. Tables 2 - 6
give the thermodynamic characteristics of reactions 1, 6, 8, 13,
and 16. There are 6 tables and 15 references: 10 Soviet-bloc and.
5 non-Soviet-bloc. The reference to the English-language publica-
tion reads as follows: G.L. Matheson, O. Maass, J. Am. Chem. Soc.
51, 674, 1929.

SUBMITTED: July 9, 1960

Card 2/5

MISHCHENKO, K.P., doktor khimicheskikh nauk; FLIS, I.Ye., kand.khimich. nauk;
BYNYAYEVA, M.K., kand.khimich. nauk; KRYUKOVA, Z.M., kand.khimich.
nauk; SALNIS, K.Yu., kand.khimich. nauk; BLOSHTEYN, I.I., inzh.;
DOBRYSHIN, K.D., inzh.; FISH, S.I., inzh.

Technology of the production of chlorine dioxide. Trudy LTITSBP
no.8:81-88 '61.   (MIRA 16:9)
                        (Chlorine oxides)

KUSTODINA, V.A.; MISHCHENKO, K.P.; FLIS, I.Ye.

Thermodynamic characteristics of the interaction between chlorine monoxide and sodium hydroxide. Zhur. prikl. khim. 34 no.1:125-129 Ja '61. (MIRA 14:1)

(Chlorine oxide)   (Sodium hydroxide)

FLIS, I.Ye.; MISCHENKO, K.P.; KUSTODINA, V.A.

Thermodynamic characteristics of the reaction between chlorine
monoxide and hydrogen peroxide in an alkaline medium. Zhur. prikl.
khim. 34 no.2:306-311 F '61.   (MIRA 14:2)
        (Chlorine oxide)   (Hydrogen peroxide)

AL'SHITS, I.M.; FLIS, I.Ye.

Thermodynamic characteristics of certain unsaturated polyethers.
Zhur.prikl.khim. 34 no.3:644-652 Mr '61.   (MIRA 14:5)
                    (Ethers)   (Thermodynamics)

FLIS, I.Ye.

Energy balance of the formation of SO_4^{--} and HSO_4^{-} ions in aqueous solutions at various temperatures. Zhur.prikl. khim. 34 no.8:1744-1747 Ag '61.   (MIRA 14:8)
                (Sulfates) (Thermodynamics)

/

15.8520

11.2217

S/080/61/034/008/014/018
D204/D305

AUTHORS·   Al'shits, I.M., Grad, N.M. and Flis, I.Ye.

TITLE: Heating power and combustibility of some polyesters,
                 used in producing plastic glasses

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 8, 1961,
                 1857-1860

TEXT: It is known that the temperature developed during the com-
bustion process can be used as one of the characteristics of inflam-
mability of organic substances. Its value can be calculated theor-
etically. The theoretical combustion temperature is the maximum
possible temperature which can be attained during the combustion of
a compound in a stoichniometric   ume of air in the absence of heat
losses. No data on theoretical   abustion temperatures of unsat-
urated polyesters which could be used in producing plastic glasses,
are available in literature. The results of calculations character-
izing the heating power of 5 polyesters synthesized by the authors,
as well as the results of experiments carried out to test their com-

Card 1/4

s/080/01/034/008/014/018
D204/D305

Heating power and combustibility...

bustibility. are reported in this article. The total quantity of
heat in the combustion reaction at temperature T can be expressed
by means of the following equation:

$$\Delta H_T = (\sum m_i c_{p_i})\, T, \qquad (1)$$

where ΔH_T is the heat effect of the combustion reaction; m_i and
c_{p_i} are the number of gram molecules of the gaseous products in the
system and their molar heat capacities, respectively. The weight
of the products of combustion and of nitrogen introduced can be
easily calculated from the combustion reaction equation. The depen-
dence of the heat capacities on temperature was expressed for all
compounds by means of Eq. (2)

$$c_p = a + bT + cT^2 \;[2]. \qquad (2)$$

The use of Eq. (1) assumes that the heat developing during combus-
tion is used to heat the gaseous compounds in the system, and that
the dissociation of the molecules of these compounds is insignifi-
cant, so that the heat consumed by dissociation is negligible, and

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Heating power and combustibility

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outside the limits of experimental error. Under such conditions. the theoretical temperature will correspond to the heating power. For calculating the heating power. the authors used the consecutive approximation method. The values of T in the combustion reactions te polyester films were calculated by means of (1). For calculating ΔH_T at various temperatures, the following well known equation was used:

$$\Delta H_T = \Delta H_0 + \Delta\Sigma aT + \tfrac{1}{2}\Delta\Sigma bT^2 + \tfrac{1}{3}\Delta\Sigma cT^3 - \frac{\Delta\Sigma c'}{T} \qquad (3$$

ΔH_0 was calculated by the same equation, using values of ΔH_{298° calculated by the authors previously (Ref. 1 Zh.Kh. XXIV, 3, 644, 1961). The values of the coefficients a, b and c for the appropriate polyesters were obtained by the least squares method. The values of the true molar heat capacities of these compounds at various temperatures were calculated by an equation proposed by A.N. Shelest (Ref. 5: Zakon teploemkostev (Law of Heat Capacities, L, (1946)). In order to find the characteristic degree of inflammability, the synthesized polyesters were subjected to the following two tests:

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